

# CLAIMS

1. A control unit for a compressor, comprising:  
an inflow quantity regulating means for regulating the inflow quantity of a fuel gas to a compressor;  
a recycle valve for returning the fuel gas discharged from the compressor to the inlet side of the compressor; and  
a control means which sets a control operating value for operating the compressor at a predetermined operation point, and controls the inflow quantity regulating means and the recycle valve based on the control operating value, characterized in that  
the control means has a first control signal generating means which generates a signal increasing with an increase in the operating value as a control signal for the inflow quantity regulating means when the control operating value is a predetermined value or larger and a second control signal generating means which generates a signal decreasing with an increase in the operating value as a control signal for the recycle valve when the control operating value is smaller than the predetermined value.
2. The control unit for a compressor according to claim 1, characterized in that the inflow quantity regulating means is an inlet guide valve provided at the inlet of the compressor.
3. The control unit for a compressor according to claim 1, characterized in that the inflow quantity regulating means is a driver for rotating the compressor.

4. The control unit for a compressor according to claim 1, characterized in that the first control signal generating means is configured so as to generate a minimum opening signal for making the opening of the inlet guide valve a predetermined minimum opening when the control operating value is smaller than the predetermined value.

5. The control unit for a compressor according to claim 4, characterized in that the value of the minimum opening signal is changed according to the pressure of fuel gas flowing into the compressor.

6. The control unit for a compressor according to claim 1, characterized in that the control operating value is a value obtained by adding an operating value for feedforward control to an operating value for feedback control.

7. The control unit for a compressor according to claim 6, characterized in that the operating value for feedback control is formed based on a deviation in pressure of fuel gas discharged from the compressor, and the operating value for feedforward control is formed based on the magnitude of load of the compressor.

8. The control unit for a compressor according to claim 5, characterized in that in the case where the fuel gas discharged from the compressor is supplied to load equipment via a header tank, the operating value for feedback control is set based on a deviation between a discharge flow rate set value corresponding to the deviation in pressure of the fuel gas and the inflow quantity of fuel gas to the header tank.

9. The control unit for a compressor according to claim 8, characterized in that the discharge flow rate set value corresponding to the deviation in pressure of the fuel gas includes the outflow quantity of the fuel gas from the header tank.

10. The control unit for a compressor according to any one of claims 6 to 9, characterized in that the valve control means is configured so that at the load shutdown time, tracking of the operating value for feedback control to a predetermined value is performed to quickly open the recycle valve.

11. The control unit for a compressor according to claim 1, characterized in that the valve control means further includes an antisurge signal generating means; and a high-level selecting means which compares an antisurge signal with the control signal of the recycle valve, and selectively sends out a higher-level signal of these signals to the recycle valve.

12. The control unit for a compressor according to claim 1, characterized in that in the case where a plurality of compressors are operated at the same time, a value obtained by adding an operating value for feedforward control to an operating value for feedback control is used as the control operating value for any one compressor, and the operating value for feedforward control is used as the control operating value for other compressors.